Volunteer Lake Assessment Program Individual Lake Reports

ROCKWOOD POND, FITZWILLIAM, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	832	**Max. Depth (m):**	6.7	**Flushing Rate (yr^{1})**	1.8
Surface Area (Ac.):	76	**Mean Depth (m):**	3.2	**P Retention Coef:**	0.63
Shore Length (m):	2,600	**Volume (m^{3}):**	989,500	**Elevation (ft):**	1111

TROPHIC CLASSIFICATION

Year	Trophic class
1977	OLIGOTROPHIC
1992	OLIGOTROPHIC

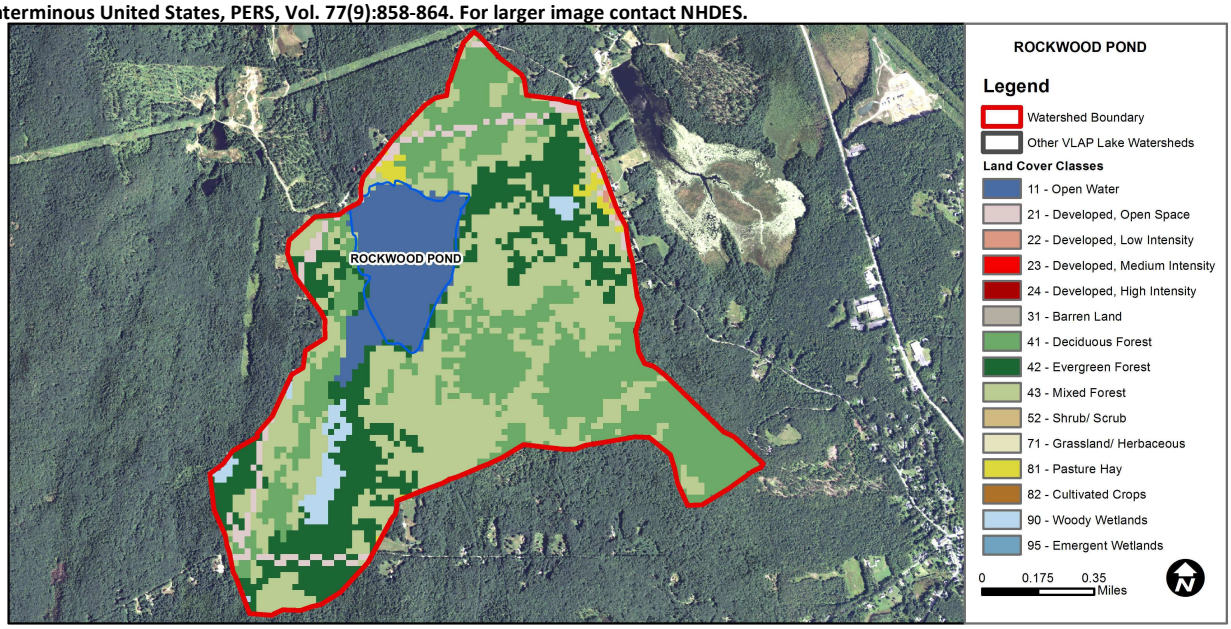
KNOWN EXOTIC SPECIES

The Waterbody Report Card tables are generated from the 2012 305(b) report on the status of N.H. waters, and are based on data collected from 2001-2011.

Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Good	>/=5 samples and median is < threshold but > 1/2 threshold value.
	pH	Bad	>10%, with a minimum of 2, samples exceed criteria, with 1 or more by a large margin.
	D.O. (mg/L)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	D.O. (% sat)	Cautionary	< 10 samples and 1 exceedance of criteria. More data needed.
	Chlorophyll-a	Good	>/=5 samples and median is < threshold but > 1/2 threshold value.
Primary Contact Recreation	E. coli	No Data	No Data for this parameter.
	Chlorophyll-a	Very Good	At least 10 samples with 0 exceedances of criteria.

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.

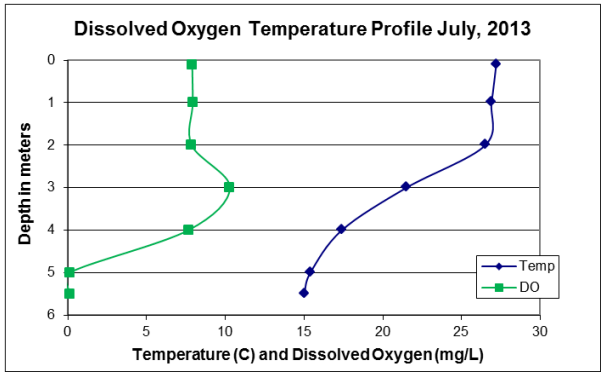


Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	10.4	Barren Land	0	Grassland/Herbaceous	0
Developed-Open Space	3.23	Deciduous Forest	27.81	Pasture Hay	0.97
Developed-Low Intensity	0.12	Evergreen Forest	18.89	Cultivated Crops	0
Developed-Medium Intensity	0	Mixed Forest	36.18	Woody Wetlands	2.41
Developed-High Intensity	0	Shrub-Scrub	0	Emergent Wetlands	0

VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS
ROCKWOOD POND, FITZWILLIAM, NH
2013 DATA SUMMARY

OBSERVATIONS AND RECOMMENDATIONS (*Refer to Table 1 and Historical Deep Spot Data Graphics)*

- **CHLOROPHYLL-A:** Chlorophyll levels were elevated in July and greater than the state median. Historical trend analysis indicates relatively stable chlorophyll with high variability between years.
- **CONDUCTIVITY/CHLORIDE:** Conductivity was relatively low at all stations. Historical trend analysis indicates significantly decreasing (improving) epilimnetic conductivity since monitoring began. We hope to see this continue!
- **E. COLI:** Beach Inlet E. coli levels were well below state standards for public beaches and surface waters.
- **TOTAL PHOSPHORUS:** Epilimnetic phosphorus was low, however hypolimnetic was slightly elevated and the turbidity was also slightly elevated. Historical trend analysis indicates stable epilimnetic phosphorus with low variability between years. Phosphorus levels in Beach Inlet and Holman Inlet were elevated.
- **TRANSPARENCY:** Transparency decreased in 2013 likely due to the increased algal growth. Historical trend analysis indicates relatively stable transparency with moderate variability between years.
- **TURBIDITY:** Turbidity levels were low at all stations except for the hypolimnion, which was slightly elevated potentially due to bottom sediment contamination.
- **PH:** Deep spot and tributary pH levels were lower than desirable range 6.5 – 8.0 units and potentially critical to aquatic life.
- **RECOMMENDED ACTIONS:** Increase monitoring frequency to three times per summer, typically June, July and August, to better assess seasonal water quality and trends and decrease variability. Phosphorus level s were elevated in Beach and Holman Inlets. Potential phosphorus sources include fertilizers, septic systems, dirt roads, logging activities, and wetlands. Educate lake and watershed residents on ways to reduce phosphorus loading to the pond, particularly through implementing stormwater best management practices to reduce stormwater runoff from their properties. DES' "Homeowner's Guide to Stormwater Management is a great resource. Keep up the great work!



NH Median Values: Median values for specific parameters generated from historic lake monitoring data.
Alkalinity: 4.9 mg/L
Chlorophyll-a: 4.58 mg/m^3
Conductivity: 40.0 uS/cm
Chloride: 4 mg/L
Total Phosphorus: 12 ug/L
Transparency: 3.2 m
pH: 6.6

NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.
Chloride: < 230 mg/L (chronic)
E. coli: > 88 cts/100 mL – public beach
E. coli: > 406 cts/100 mL – surface waters
Turbidity: > 10 NTU above natural level
pH: 6.5-8.0 (unless naturally occurring)

Table 1. 2013 Average Water Quality Data for ROCKWOOD POND

Station Name	Alk. mg/l	Chlor-a ug/l	Cond. uS/cm	E. Coli #/100ml	Total P ug/l	Trans. m NVS	Trans. m VS	Turb. ntu	pH
Beach Inlet			23.2	30	17			0.17	4.53
Epilimnion	0.30	7.51	27.4		6	3.20	3.45	0.77	5.36
Hypolimnion			34.5		14			1.59	5.82
Holman Inlet			48.7		26			0.26	5.49
Outlet			27.0		7			0.84	6.12
Tommila Inlet			27.0		7			0.74	6.00

HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation	Parameter	Trend	Explanation
pH	Stable	Trend not significant; data highly variable.	Chlorophyll-a	Stable	Trend not significant; data highly variable.
Conductivity	Improving	Data significantly decreasing.	Transparency	Stable	Trend not significant; data moderately variable.
			Phosphorus (epilimnion)	Stable	Trend not significant; data show low variability.